



GUIDELINES

GUIDELINE E.01– Private Use Dispensing From Protected Aboveground Tanks

E.01.1 PURPOSE

Storage and dispensing of motor fuels into the fuel tank of a motor vehicle from protected aboveground tanks located outside buildings shall be in accordance with these guidelines. Historically the dispensing of fuel into motor vehicles has been accomplished using underground storage tanks and aboveground dispensers. Large quantities of flammable and combustible liquids stored in underground containers were seen as the safest method of storage from a fire-safety standpoint. However, environmental concerns have increased over the past several years, creating the need to identify alternate methods of storage that reduce the impact to the underground environment.

E.01.2 SCOPE

Section 5202.4.1 of the 2001 California Fire Code (CFC) prohibits dispensing of Class I and Class II liquids into the fuel tank of a motor vehicle from aboveground tanks. These guidelines offer an alternate method, allowing dispensing of fuel from tanks outside of buildings or special enclosures where the dispensing is for private use (e.g., golf ranges, rental equipment, nurseries, etc.) and not for public or retail sales applications.

E.01.3 PROCEDURE

1. PERMITS AND PLANS

A Fire Department permit is required to install, operate, repair or modify protected aboveground tanks used for storage and dispensing of flammable or combustible liquid motor fuels. All CFC permits are issued after the installation is completed in accordance with the approved plans and specifications. Prior to issuance of the Fire Department's permit to install, all other applicable permits shall be obtained (i.e., Building, Planning, South Coast Air Quality).

Installation plans shall be submitted to the Building department for review. The plans shall include the design, details, and specifications of the following:

- Quantities and types of liquids to be stored
- Distances from tanks and dispensers to property lines, buildings, and other exposures
- Vehicle access
- Fire appliance
- Vehicle impact protection



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- Protected or multi-hazard aboveground tanks and their supports
- Method of storage and dispensing
- Overfill prevention, spill containment, vents, vapor recovery dispensers, and other equipment and accessories
- Seismic design in accordance with the Building Code
- Secondary containment
- Venting
- Piping
- Electrical systems
- Emergency controls
- All product listing data
- Other information as required by the Fire Chief

2. TANK DESIGN

Protected aboveground tanks shall be listed and shall meet the requirements of UFC Standard 79-7.

3. SEPARATION DISTANCES

Tank Capacity (gallons)	MINIMUM DISTANCE FROM PROPERTY LINE OF PROPERTY WHICH IS OR CAN BE BUILT UPON, INCLUDING THE OPPOSITE SIDE OF A PUBLIC WAY (feet)	MINIMUM DISTANCE FROM NEAREST SIDE OF ANY PUBLIC WAY OR FROM NEAREST IMPORTANT BUILDING ON THE SAME PROPERTY (feet)
750 or less	5	5
751 to 12000	7 ½	5

4. TOTAL QUANTITY

Primary tanks of protected aboveground tanks shall not exceed a 12,000-gallon individual or 48,000 –gallon aggregate capacity. Tank installations having the maximum allowable aggregate capacity shall be separated from other installations of protected aboveground tanks by not less than 100 feet.

5. NORMAL VENTING

Normal vent pipe outlets shall be located such that vapors are released at a safe point outside of the building and not less than 12 feet above the adjacent ground level. Vent outlets shall be



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located such that flammable vapors will not be trapped by eaves or other obstructions and shall be at least 5 feet from building openings or property lines of properties that can be built upon.

Additional emergency venting that will relieve excessive internal pressure caused by exposure fires is required for primary tank and the interstitial space of a secondary containment tank. Do not alter emergency vents unless approved by manufacturer.

6. SECONDARY CONTAINMENT

Protected aboveground tanks shall be provided with drainage control or diking in accordance with CFC Sections 7901.8 and 7902.2.8 or with secondary containment that is a component of the listed protected or multi-hazard tank system. Secondary containment systems shall be monitored either visually or automatically. Enclosed secondary containment systems shall be provided with emergency venting.

7. FLAME ARRESTORS

Approved flame arrestors or pressure vacuum breather valves shall be installed in normal vents.

8. VEHICLE IMPACT PROTECTION

Guard posts or other approved barrier protection shall be provided to protect tank from vehicle impact. When guard posts are installed, the posts shall be:

1. Constructed of steel not less than 4 inches in diameter and concrete filled,
2. Spaced not more than 4 feet between posts on center,
3. Set not less than 3 feet deep in concrete footing of not less than a 15 inch diameter,
4. Set with top of posts not less than 3 foot aboveground, and
5. Located not less than 5 feet from the tank.

9. OVERFILL PREVENTION

Protected aboveground tanks shall not be filled in excess of 90 percent of their capacity. An overfill prevention system shall be provided for each tank. During tank filling operation, the system shall:

- Provide an independent means of notifying the person filling the tank that the fluid level has reached 85 percent of tank capacity by providing an audible or visual alarm signal, providing a tank level gauge marked at 85 percent of tank capacity, or other approved means, and



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- Automatically shut off the flow of fuel to the tank when the quantity of liquid in the tank reaches 90 percent of tank capacity. For rigid hose fuel-delivery systems, an approved means
- shall be provided to empty the fill hose into the tank after the automatic shutoff device is activated.
- A permanent sign shall be provided at the fill point for the tank documenting the filling procedure and the tank calibration chart. The filling procedure shall require the person filling the tank to determine the number of gallons required to fill it to 90 percent of capacity before commencing the fill operation.

10. FILL PIPE CONNECTIONS

The fill pipe shall be provided with a means for making a direct connection to the tank vehicle's fuel-delivery hose so that the delivery of fuel is not exposed to the open air during the filling operation. When any portion of the fill pipe exterior to the tank extends below the level of the top of the tank, a check valve shall be installed in the fill pipe at a point not more than 12 inches from the fill hose connection. See CFC Section 7901.11.4 for tank valves.

11. SPILL CONTAINERS

A spill container having a capacity of not less than 5 gallons (18.9 L) shall be provided for each fill connection. For tanks with a top fill connection, spill containers shall be noncombustible and shall be fixed to the tank and equipped with a manual drain valve which drains into the primary tank. For tanks with a remote fill connection, a portable spill container shall be provided.

12. SIGNS

Warning signs and identification signs shall be installed to clearly identify hazards. The design of such signs shall be in accordance with CFC Sections 5201.8 and 7901.9. Conspicuous signs prohibiting simultaneous tank filling and fuel dispensing shall also be posted.

13. TANK OPENINGS

Tank openings in protected aboveground tanks shall be through the top only.

14. ANTI-SIPHON DEVICES

Approved anti-siphon devices shall be installed in each external pipe connected to the tank when the pipe extends below the level of the top of the tank.